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tastes in toys, purposely to test poor Moll's system of mnemonics. The eldest boy was about to give his orders in a loud key, when Moll Miskellagh, with a proper reverence for her own sex, pushed him aside, and desired the "young Miss" to "spaik up first."

"A sixpenny doll, and two dishes for my baby-kitchen," squeaked miss.

"Now, young masther, yours ?"

"A top, Moll—not a pegging-top, but a humming-top I want."

"A hummin'-top !" cried the market-woman, impatiently; "arrah, what the dhioul is a hummin'-top ?"

"Why, a humming-top is a-a-a-humming top," quoth young master, somewhat posed. "It makes a noise this way—hum, hum, hum—for all the world like a droning beetle."

Poor Moll had no acquaintance with any beetle but a sort of wooden instrument with which peasant maidens pound their coarse clothes when washing them at a stream or river; and "a dhronin' beetle !" she ejaculated, opening wide her small grey eyes, and looking from one to the other for an explanation; while grandpapa, his face bathed with tears from excessive laughter, prepared to make matters clear, but in reality to make "confusion worse confounded." But the hero of the humming-top thought no one knew its peculiarities so well as himself, and he ended the dilemma by describing a humming-top to be "a great deal larger than a common top, had a square hole in one side, and it was always painted red."

"That'll do," said Moll Miskellagh, trying to be satisfied. "I'll inquire about sitch a thing, any how. An' now, little masthers, what's your pleasures ?"

One chose "a whip," and the other "cakes," and then we thought poor Moll had her quantum, and that she might proceed on her journey. But so thought not Moll. Confident of her retentive powers and strength of frame, she seemed determined to test herself to the utmost; and before she left the house, she descended to the lower regions to offer her services to the dignitaries of the kitchen. She was expected, it seemed, for cook had a lot of "kitchen stuff" to be disposed of in town, the butler to send for a new razor, the housemaid to have a letter put into the post-office, directed to "John Fitz-Garald, at Mr Crosbie's, esquire, Dublin, Great Britain-street, Ireland," and the kitchen-maid to send for a wire comb to support her redundant tresses.

"Any thing else, now ?" demanded the messenger, her foot on the threshold of the outer door.

"No ! no ! no !" exclaimed all the voices at once; "away with ye, an' God speed ye !"

"Amin !" muttered the market-woman, striding up the steep stone steps, through the yard, and down the avenue, without "casting a longing, lingering look behind."

I will not say how often we children teased our dear, good, angel-tempered grandmother with "when will Moll Miskellagh return ?" Suffice it to say, we thought of nothing but Moll, looked for no one but Moll; and until we actually beheld Moll panting up the steep avenue with a prodigious load on her back, a huge basket on one arm, and the post-bag on the other, her two pockets or rather wallets filled to the brim, we never gave ourselves or others rest or peace!

But the market-woman was triumphant ! Not one single commission did she forget, and every one was satisfied with her dealings and bargains except the butler, whose razor was base metal, instead of steel, or even iron ! But who could blame Moll Miskellagh ? Abler persons, and of the sex that used such scrapers, had been imposed on ere then. Witness—

Being well lathered from a dish or tub,
Hodge now began with grinning face to scrub,
  Just like a hedger cutting furze ;
'Twas a vile razor ! Then the rest he tried—
All were impostors ! "Ah !" Hodge sighed,
  "I wish my eighteen-pence within my purse !"

Yes ! our market-woman was triumphant ! and for many years she retained her situation, exhibiting the same strength of memory, fidelity, and honesty, to the last. But I must mention how nicely we nicked our grandpapa for his indiscreet attempt to puzzle our purveyor on her first essay. Ever after, we regularly called upon him for "means to test the market-woman's memory," and he good-humouredly always complied with the demand. Then, oh ! what an interesting object Moll became to us ! How we used to watch for the first glimpse of the huge white load resting on her back, and rising considerably above her head ! And how often in our eagerness we mistook white cows, ladies dressed in white, and white horses, for our dearly beloved Moll Miskellagh !

One evening we expected some particularly nice things by our market-woman. It was somewhere about Christmas, when our means swelled considerably by the addition of Christmas gifts. Many times during the evening we had seen things very like Moll in the distance, but which turned out most bitter disappointments. All four were stuck in a window that commanded a full view of the road to E——; and never did the unfortunate lady of Bluebeard put more earnest eager inquiries to her sister Anne, "is there any body coming ?" than we did to each other on this momentous occasion. At length, oh, sight of joy ! we beheld a white object descending the opposite hill. "She is coming ! she is coming !" screamed a quartetto of young voices, and down we flew to the avenue gate. Alas and alack ! it was not Moll, but a gentleman on a white horse ! We gazed on each other in breathless dismay; but one of the party, though sadly confounded, resolved to hear of our messenger if possible, since he could not see her, and, boldly advancing, demanded of the traveller "if he were coming from E——?"

The gentleman, for he was a gentleman, appeared somewhat surprised at this address, but observing a group of rosy, merry-looking children, he reined in his horse, and smiling good-naturedly, replied that "he was then returning from that town."

Emboldened by this condescension, the next query was, "had he seen Moll Miskellagh ?"

The stranger laughed outright. "Really, my dear," said he, "I have not the pleasure to know any one of that name. Pray who and what is Moll Miskellagh ?"

"Our market-woman, sir," quoth our spokesman.

"Ha ! What sort of person is she, pray ? Perhaps I did see her."

We looked at one another doubtfully, the look plainly expressing "How shall we describe her ?" when at last the first speaker, with the air of an incipient judge of female beauty, took on himself to reply, "that Moll Miskellagh was a very ugly woman indeed, that she had a pale yellow face, and a great wart near her nose; that she wore a dark blue cloak, an old black bonnet, and that she carried a prodigious, oh ! a very big load on her back."

"Never was description more graphic !" exclaimed the traveller, still laughing. "I did indeed see your market-woman. I passed her about a quarter of a mile from this; and if you have patience, my dears, you will soon see her. You expect some nice things by her, I am sure—Eh ?"

"Oh dear, yes, sir"—and thereupon we eagerly enumerated all that Moll was charged to purchase. The kind gentleman seemed to enjoy our delightful anticipations, asked us our names, and various other questions, and charitably kept us employed till poor over-laden Moll actually came in sight, and until he witnessed our clamorous welcomes, and saw us in possession of our treasures. Nay, he lingered to laugh at our expedient to facilitate Mrs Miskellagh's tardy movements up the very steep avenue—one and all of the four juveniles getting behind her and pushing her up (much in the way the veritable Captain Kearney's fair but fat cousin was sent up the companion-ladder, as described in "Peter Simple"), the boys shouting "Yo heave ho !" as the good ship Old Moll got into port.

Peace to the poor market-woman ! In some lone and humble church-yard she now rests after her life of labour—in the memory of those who knew her, her only epitaph,

"Simple, faithful, honest, much-enduring Moll Miskellagh !"

ANIMAL HEAT.

Second Article.

In the last paper on this subject a few instances were quoted, showing the great extremes of temperature which human beings and the lower animals are capable of enduring without injury, and in many cases without inconvenience. We propose in the present article to notice briefly the means by which it is believed living creatures are enabled to exhibit this power; and although physiologists are not unanimous in their opinions on the subject, yet the views we shall endeavour to explain are those which are held by the majority of scientific men, and which are best supported by experiment, by analogy, and by the authority of illustrious names.

For the purpose of making the subject clear to those who may not be acquainted with the principles of physiology, "the science of life," as it has been happily termed, it may be useful to explain the *rationale* of an operation continually being performed by all of us, and yet very little thought of or understood—we mean the process of breathing. It is found that the natural heat of animals depends on the perfection of the apparatus by which respiration is performed; those animals which have a complicated respiratory organization having a high degree of bodily heat, while those which have more simple and less delicately formed organs have a temperature very little raised above the medium in which they live.[*] It is necessary, therefore, to have a clear idea of the process of respiration before we can understand the connection between it and animal heat.

The object of respiration is to purify the blood and render it fit for the various offices it performs in the animal economy. When the blood leaves the heart to be distributed through the body, it is of a very bright red colour, but as it proceeds in its course it gradually loses this and assumes a purple hue; and when, having completed its circulation through the body, it is returned to the heart again by the veins, it has entirely lost its former bright colour, and is then very dark, and, from the impurities it has acquired in its course, unfit for the purposes of life. To restore its former qualities it is necessary that it should be brought into contact with the atmosphere, and this takes place in the lungs. By the action of the muscles of the chest and abdomen, the interior of the chest is increased in size, an empty space is formed into which the air instantly descends by the mouth or nostrils, constituting what is termed the act of inspiration. At the same moment that the muscles of the chest increase its size and make room for the air to descend, at that very moment the heart contracts, or in popular language pulsates or beats, the effect of which is to force the dark-coloured (venous) blood from the portion of the heart in which it was contained, into the lungs. The lungs are composed almost entirely of an innumerable number of vesicles, or minute air-bladders, into which the air descends, as we have stated. These vesicles are covered with a network of extremely fine blood-vessels. When the heart pulsates, it fills these vessels with the dark-coloured blood; and as the air is capable of passing through both the coats of the vesicle and of the blood-vessels, it of course comes into direct contact with the blood, and a chemical change immediately takes place.

This chemical change is necessary for life: the air is changed in its qualities, and the blood is also changed in its qualities. The air is changed by having one of its constituent elements (oxygen) abstracted from it; and the blood is changed by its being impregnated with this gas, and relieved of another kind called carbonic acid. If from any circumstance this process is interfered with, the individual dies of suffocation. A person may be suffocated for want of air, or for want of pure air. In the former case his death is caused in this manner:—The wind-pipe being closed, either by pressure, as in the case of criminals who die by hanging, or by something entering and obstructing it, it happens that although the muscles of the chest enlarge its internal area, as before mentioned, the air cannot descend into it. This does not, however, interfere with the action of the heart, which forces the dark blood into the minute blood-vessels of the chest, as usual; the blood passes onward unchanged; it receives no oxygen, nor is its bright red colour restored. In this state it reaches the chamber of the heart, from whence it is to be distributed to the head and body; a portion of it is forced up the vessels which convey it to the brain, and the moment it reaches this organ, it produces violent convulsions, insensibility, and in a few moments death. A similar result takes place from breathing foul air. In this case, although air may descend into the air-vessels of the lungs, yet, as the grand element, the oxygen, is not present, no change is produced in the blood; it pursues the same course as that just pointed out, unchanged in its quality, and the same fatal result is the inevitable consequence.

The atmosphere in a state of purity is composed of two gases mixed together; the one termed *oxygen*, the other *nitrogen*. After escaping from the lungs, the air is found to have undergone a remarkable change; the oxygen has disappeared, and its place is supplied with an equal volume of another gas called *carbonic acid*; while at the same time the air is altogether altered in many of its more important qualities; it is no longer fit for the purposes of life, nor will a light burn in it. A person shut up in a confined place without a supply of fresh air, very soon expires: and a candle placed under a glass vessel filled with air that has been breathed, immediately goes out. In short, respiration and combustion are similar processes, and the same result is produced by both, namely, carbonic acid gas.

This gas is formed by the mixture of oxygen with carbon (charcoal). It is absorbed very readily by water, and is perhaps best known in the form of soda water; the aërated liquid sold under that name being nothing more than water strongly impregnated with carbonic acid gas. It is formed by a variety of processes—by breathing, by combustion, by fermentation, and otherwise. In every case, however, its formation is attended with heat. And now, having thus briefly introduced the subject, we may mention, that on this fact is founded the theory which attempts to explain the means by which the animal temperature is produced and maintained. It is founded on the fact, that whenever oxygen enters into combination with carbon, and forms carbonic acid gas, heat is always produced.

The most usual manner in which this is effected is by combustion; the substance which burns, such as wood, or tallow, or coal gas, for example, consists principally of carbon, and on being ignited, the oxygen of the atmosphere is made to combine with it, and carbonic acid is the result. Every body knows that heat is produced by this process; but there are many instances in which the same effect may take place without being so readily understood. Heat and light are so constantly found united, that we can hardly conceive how so large a substance as the human body can be kept constantly warm without the aid of fire. It is, however, effected by a chemical process identically the same as combustion, except that light is not produced. The lungs may be regarded as the furnace of the body, from which it derives its supply of heat; the fuel is the carbon in the blood; and the wind-pipe is a chimney serving a double purpose: first, to allow of the passage of fresh air for the process, and then to convey away the vapour which is produced by it; for the breath which issues from our lungs is just as much deteriorated in quality as that which escapes from the chimney of a large furnace after passing through the fire.

This, then, is the process by which the animal heat is maintained. The blood comes to the lungs loaded with carbon; the air descends the wind-pipe, consisting of one-third oxygen; the carbon of the blood and the oxygen of the air unite; the blood is purified, and carbonic acid gas is produced. This is attended with heat; the purified blood is capable of absorbing all this heat, and does so. In its progress through the body, as the blood again becomes impure, it gradually parts with the heat so acquired, and on again being purified, it receives a fresh supply. Nothing can be more simple and beautiful than this process; it is in accordance with every great operation in nature, which is always effected in the most direct and simple manner; and the proofs that this is the manner in which nature effects her object in this instance, are numerous and unanswerable.

There are two circumstances which at first sight may appear to interfere with the explanation above given of this very beautiful phenomenon. First, the lungs are found to be but very little warmer than any other part of the body, although, as we have stated, the animal heat is produced in them: and, secondly, the quantity of carbon produced by respiration is very small compared with the genial heat produced by its conversion into carbonic acid. With regard to the heat of the lungs, a series of experiments instituted for the purpose of ascertaining how they were kept at so moderate a degree of temperature, led to the discovery of an extraordinary change which takes place in the vital fluid after being purified, which satisfactorily explains the circumstance. The pure blood is found to have a greater capacity for heat than impure blood: it will absorb more; and in consequence, all the heat

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[*] Animals are divided by naturalists into two classes, cold-blooded and warm-blooded; the latter breathe by lungs, through which all the blood of the body is continually passed, and which has direct communication with the air. Cold-blooded creatures, such as fishes, breathe by means of gills, and the air, instead of coming into direct contact with their vital fluid, is absorbed from the water. In the case of reptiles, which are cold-blooded, although the air may come into direct contact with the blood, as in the respiration of the frog, yet, by the peculiar structure of his lungs, only half the blood is sent to them to be purified; and thus his superiority over the fish in receiving air direct, is balanced by the circumstance that his blood is only half purified, in consequence of being only in part exposed to the action of the air. The temperature of animals is found to have relation to their activity and vital energy. The following list exhibits the temperature of the animals mentioned.—

Birds, ..	108 degrees Fahrenheit.	Frog, ..	40 degrees Fahrenheit.
Sheep, ..	100 degrees —	Snail, ..	36 degrees —
Worms, ..	58 degrees —	Fish, ..	60 degrees —

produced by its purification is immediately absorbed by it, and carried away as fast as it is generated, to be distributed over the body As. the blood becomes impure in its progress, it gradually loses its power of retaining the heat it had so imbibed; and the heat therefore is distributed during the circulation of the blood, and every part receives a due supply. This change in the power of the vital fluid to absorb heat, according as it is more or less pure, is a fact that was not established in the time of Paley, or he would have been able to add another proof of design to his unequalled argument.

The quantity of fuel (if we may use the expression) required for generating the heat of the animal frame, is certainly less than we might anticipate. All animal and vegetable food contains a considerable portion of carbon, which of course, after being digested, becomes a part of the vital fluid, and in this way it is supplied for the process. It is well known also that in cold climates, where a greater quantity of animal fuel is required, the inhabitants are extremely fond of fat and oily matters, which contain more carbon than any other kind of food; yet it would hardly be imagined that so small a quantity as the eighth part of an ounce of carbon per hour would be sufficient to maintain the heat of the body at an uniform temperature of 98 degrees. We are assured by the best chemists, however, that the average quantity of carbonic acid generated by a person in health in twenty-four hours is about 40,000 cubic inches, and this contains only about 11½ ounces of pure carbon. Rather less than half an ounce is therefore used per hour in preserving the body at its usual temperature.

The limits of this article prevent our noticing other objections which have been urged against the theory just described, but the facts it rests upon can only be overturned by opposing facts which have never yet been produced. It is certain that carbonic acid is produced during respiration, that its production is always attended with heat, that pure (arterial) blood is capable of absorbing a greater portion of heat than impure (venous) blood, and that the temperature of any part of the body is according to the supply of blood which it receives; an inflamed part becoming very hot, and a limb in which the circulation has been stopped by a bandage becoming cold. These facts taken together sufficiently prove the truth of the conclusion that has been drawn from them, and which we have above very briefly illustrated.

It remains to say a few words on the manner in which the body is relieved of its superabundant heat, and enabled to bear such high degrees of temperature as mentioned in the former paper. Franklin was the first who gave a rational explanation of the phenomenon. He observed that the evaporation of a small quantity of a liquid from the surface of any substance would reduce the temperature of a very large body. If we place a little ether on our hand, and allow it to evaporate, we shall soon become sensible how much cold may be produced in this way. Wine-coolers are formed on this principle; they are made of porous earth, through which the water they contain oozes very gradually, and is evaporated by the heat of the air: this cools the liquid within, and of course the decanter of wine contained in it. Now, perspiration cools the body in a similar manner. If any person looks closely at the fleshy part of his hand, he will observe that the minute ridges which lie nearly parallel to each other are covered with an innumerable number of small pores, through which the perspiration may be seen issuing when the hand is warm. From microscropic observations it is calculated that the skin is perforated by 1000 of these pores, or holes, in every square inch, and that the whole surface of the body therefore contains not less than 2,304,000 pores! When the body is heated to a certain degree, the fluid portions are all directed to the skin, and escape gradually through these pores in the form of perspiration, and the cooling power thus produced is capable of immediately removing the superabundant heat. The moment perspiration broke out on the bodies of the experimenters who ventured into the heated oven, all sense of pain was removed; and in many fatal disorders to which man is subject, the first symptom of returning health is a similar occurrence. We may add, that a common cold is the effect of the perspiration being suddenly checked, and that the health of the body depends on the minute pores we have referred to being kept open and in action.

J. S. D.

Society makes criminals, and then punishes them for their misdeeds.

ORIGIN AND MEANINGS OF IRISH FAMILY NAMES.

BY JOHN O'DONOVAN.

The Seventh and Concluding Article.

At the present day very few of the original Irish names remain without being translated into or assimilated with those borne by the English. Of this I shall next furnish instances, the truth and correctness of which cannot be controverted. Among the O'Conors of Connaught, the name Cathal, which is synonymous with the Welsh Cadell, and signifies *warlike*, was changed to Charles after the accession of Charles I. to the throne; for the Irish, who were attached to this monarch, went great lengths to assimilate several of their Christian names to Charles. Thus, while among the O'Conors of Connaught, Cathal was manufactured into Charles (with which, it will be readily granted, it has nothing in common, either in meaning or sound), among the O'Conors of Faly in Leinster, Cahir, which signifies *warrior*, was metamorphosed into the same; and at the same time the Mac Carthys of Desmond substituted it for their Cormac, and the O'Hagans and other northern families for their Turlogh. This was paying their court to the king with a vengeance!

In the families of Mac Carthy, O'Sullivan and O'Driscol, Finghin [Fineen], a name very general among them, and which signifies *the fair offspring*, has been anglicised to Florence. Among the same southern families the name Saerbrethach, which prevails among the Mac Carthys in particular, and which signifies the *noble judge*, is translated Justin. In the family of O'Donovan, as the writer has had every opportunity of knowing, the name Murrogh has been metamorphosed to Morgan; Dermod, to Jeremiah; Teige, to Timothy; Conor or Concovar, to Cornelius; Donogh, to Denis; and Donnell, to Daniel. In the family of O'Brien, the hereditary name of Turlogh has been changed to Terence; Mahon, to Matthew; Murtogh or Moriertagh, to Mortimer (but this very lately); and Lachtna and Laoiseach, to Lucius. Among the O'Gradys the name Aneslis is rendered Stanislaus and Standish. In the families of O'Donnell, O'Kane, and others, in the province of Ulster, Manus, a name borrowed by those families from the Danes, is now often rendered Manasses. In the families of Mac Mahon and Mac Kenna, in Ulster, the name Ardgal or Ardal, signifying *of high prowess or valour*, is always anglicised Arnold. In the family of O'Madden of Shilanamchy, in the south-east of the county of Galway, the hereditary name of Anmcha, which is translated Animosus by Colgan, is now always rendered Ambrose, to which, it will be readily granted, it does not bear the slightest analogy. Among the families of Doyle, Cavanagh, and others, in the province of Leinster, the name Maidoc, or Mogue, which they adopted from St Maidoc, or Aidan, the patron saint of the diocese of Fernes, is now always rendered Moses among the Roman Catholics, and Aidan among the Protestants! (any thing to make a difference.) Among the O'Neills in the province of Ulster, the name Felim, or Felimy, explained as meaning *the ever good*, is now made Felix; Con, signifying *strength*, is made Constantine; and Ferdoragh, meaning *dark-visaged man*, is rendered Ferdinand. Among the O'Conors of Connaught, the name Ruaidhri, or Rory, is anglicised Roderic, but among most other families it is rendered Roger. In the same family, Tomaltach is rendered Thomas; Aodh, Hugh; and Eoghan, Owen. In the families of Mac Donnell and others in Scotland, and in the north of Ireland, the name Aengus, or Angus, is always rendered Æneas. Among the O'Hanlys of Slieve Bawn, in the east of the county of Roscommon, the name Berach, which they have adopted from their patron saint, and which is translated by Colgan, *directe ad scopum collimans*, is now always and correctly enough rendered Barry. Throughout Ireland the old name of Brian is now rendered Bernard, and vulgarized to Barney, which is more properly an abbreviation of Barnaby than of Bernard. Among the O'Haras and O'Garas in the county of Sligo, the name Kian, which they have adopted from their great ancestor Kian, the son of Olioll Olum, king of Munster, is now rendered Kean; and I observe that the chief O'Hara has suffered himself to be called Charles King O'Hara in a book lately dedicated to him! In the family of Maguire, Cuconnaught is rendered Constantine, while in other families Cosnavy undergoes precisely the same change. In the family of O'Kane, the name Cooey, written Cu-maighe in the original language, and signifying "*dog of the plain*," is now rendered Quintin. In the family of O'Dowd, the ancient name